

## Amendments to the Specification

Please replace paragraph 0025 on page 9 as follows:

FIG. 3 is an illustration of a system 300 for high speed optical data transmission in accordance with the present invention. System 300 comprises a light source 301, a lens 303, and a large core multimode fiber optic cable 305. In general, large core multimode fiber optic cable 305 has a core 306 having a diameter  $d$  that is typically greater than 50 microns. In an embodiment of the high speed optical data transmission system a diode laser or a light emitting diode (LED) is used as light source 301. Light source 301 provides light having a wavelength greater than 750 nanometers. A light signal 302 is launched from light source 301 to lens 303. Lens 303 ~~collimates and~~ focuses light signal 302 to launch mostly lower order modes into large core multimode fiber optic cable 305. In an embodiment of system 300, lens 303 has a high numerical aperture for establishing, collimating, for example, a numerical aperture of 0.5.

Please replace paragraph 0026 on page 9 as follows:

A diode laser or LED emitting an irregular train of short optical pulses representing “1”s and “0”s will radiate into a large cone of light if the beam is allowed to expand freely. Lens 303 has a focal length  $f$ . Lens 303 focuses light upon core 306 of large core multimode fiber optic cable 305. Light signal 302 is ~~collimated~~ focused by lens 303 ~~and focused having such that the focused light signal, upon reaching core 306, has~~ a diameter substantially equal to the core diameter  $d$  of large core multimode fiber optic cable 305 when placed a distance  $f$  from core 306. The output from lens 303 is a ~~collimated and~~ focused light signal 304. ~~Collimated and focused~~ Focused light signal 304 is injected into the core of large core multimode fiber optic cable 305 and excites a minimal number of fiber modes, that is, modes with low values for  $l$  and  $m$  are produced. Hence, under these conditions, the length/data rate product for large core multimode fiber optic cable 305 is maximized.